

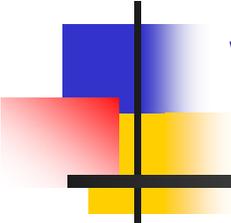
Australian Business Economists



Professor David Vines
Oxford University & Australian National University

*How did we get here and
what to do now*

05 November 2009, Sydney



How did we Get Here and What to do Now?

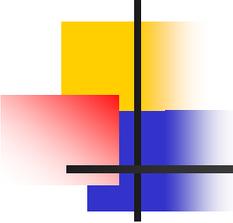
David Vines

Oxford University, Australian National University, and CEPR

Presentation to ABE

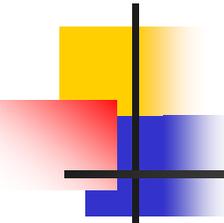
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Introduction

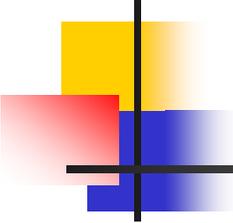
- The Great Moderation
 - Very good outcomes
 - although admittedly the environment was good
 - Policy was apparently very good.
 - And new Keynesian theory was apparently in good shape
 - Then things fell apart, unexpectedly
- Why did we not see it coming ?
 - Paul Krugman responds to this question
 - 'How did Economists get it so Wrong' (*New York Times*, 6 September, 2009)



...plan of this talk....

The talk will have three parts

- First, a description of Krugman's story in his 'How Did Economists Get It So Wrong' piece, and a demonstration that his story, although suggestive, is inadequate
- Second, a description of what macroeconomists need to understand about the financial system
- Finally, a discussion of what the main policy issues are now

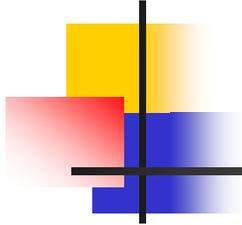


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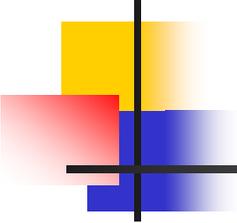
The Krugman story

1.1 A three-step story

- Firstly, Krugman describes how, over the last 50 years, economists gradually became more conservative.
 - ‘...Economists fell back in love with the old [i.e. pre Great Depression], idealised vision of an economy in which rational individuals interact in perfect markets,
 - This influenced their view of policy. For example Lucas says the Obama administration’s stimulus plans are “schlock economics,” and his Chicago colleague John Cochrane says they’re based on discredited “fairy tales.”
- Secondly, Krugman suggests that economists ‘fell back in love with the old idealised version of the economy’ *because* economists were ‘mistaking beauty for truth’.
 - ‘...the central cause of the profession’s failure was the desire for an all-encompassing, intellectually elegant approach that also gave economists a chance to show off their mathematical prowess’.
 - Krugman is implicitly saying – although he is never explicit about this - that only the ‘old idealised vision’ can be represented in an ‘all-encompassing, intellectually elegant’ form of analysis, of the kind that economists desired to produce

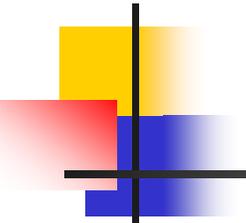


- Thirdly, Krugman suggests that
 - ... 'economists need to abandon the neat but wrong solution of assuming that everyone is rational and markets work perfectly.'
 - As a result, 'economists will ...[then] learn to live with messiness – will ... acknowledge the importance of irrational and often unpredictable behaviour...[and will] face up to the often idiosyncratic imperfections of markets...In practical terms this will translate into more cautious policy advice – and a reduced willingness to dismantle economic safeguards in the faith that markets will solve all problems.'



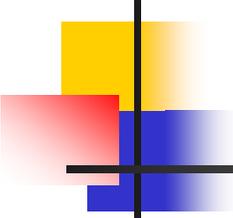
1.2 Evaluation of Krugman's story

- Krugman is too optimistic - things are actually worse than he suggests.
 - The above suggests that all economists are like Lucas or Cochrane in assuming that everyone is rational and markets work perfectly, and that is necessary is that we should all abandon this assumption.
 - But I have never believed any of this – and neither has, say, Stan Fischer, or Olivier Blanchard.
 - But even although I never believed any of this, I did not see the crisis coming.
 - Actually I saw the wrong crisis coming (arguing that there would be a collapse of the dollar) but that is another story
 - So I am in trouble, even although I never believed any of the stuff about perfectly functioning markets. And so are Fischer, Blanchard, and the rest of us.
 - Our trouble is, not that we all assumed that markets are perfect, but that instead – more prosaically - that we did not understand how financial markets work.
 - Some of us, like Greenspan, were blinded because of a prior belief – it seems – that financial markets always work perfectly
 - But the rest of us just did not understand financial markets enough to understand what can go wrong with them.



1.3 Krugman's proposals for the future of macroeconomics

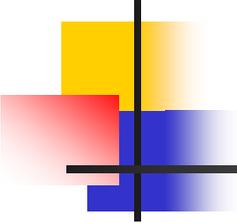
- Krugman suggests, in response to the problem analysed in his story, that economists
 - ... '...should do their best to incorporate ...finance into macroeconomics'.
 - 'should recognise that Keynesian economics remains the best framework we have for making sense of recessions and depressions'
- In my view these are good ideas. But I also believe that – basically – they have got nothing to do with Krugman's story. (A careful reader of his paper will, I believe, be able to see this.)
- Thus, in what follows I will:
 - discuss the incorporation of finance into macroeconomics
 - Consider the main policy questions facing the world now



2 Introducing Finance into Macroeconomics: Preliminaries

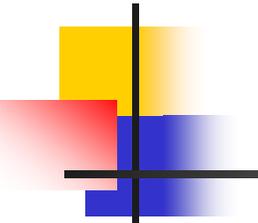
2.1 Background

- In the modern macro model the financial system intermediates (essentially costlessly) between savers and lenders
 - The central bank sets the short term interest rate on govt bonds – and thus, by expectations the long rate
 - Remember that we have abolished the LM curve
 - A competitive financial system – including banking system - drives risk premia down to very low levels
 - Thus effectively the central bank sets the interest rate in the IS curve
- To understand the role of finance in macroeconomics we need to incorporate – at least - the effects of *four* new features in a macroeconomic model
 - Creation of longer-term risky securities through the 'originate to distribute' model
 - Highly leveraged financial institutions (HLFIs) borrowing in short-term, low-risk money markets to invest in longer-term, risky securities
 - Mark-to-market accounting



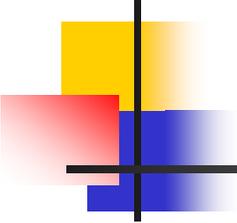
2.2 The nature of HLFIs

- Highly leveraged financial institutions (HLFIs) invest in risky asset backed securities
 - partly funded by equity finance, and
 - partly by borrowing from elsewhere at lower interest rates (leverage).
 - This increases their expected return on equity but makes it more risky
- HLFIs engage in leverage up to the limit of the risk that they are prepared to bear, given the expected return, and the expected variability of this return, which can be worked out from knowledge of the assets in which they invest. (Adrian and Shin, 2009)
- At a time of very low interest rates there were high returns to doing this.
 - search for yield very important
 - Created strong incentives to push leverage up to the maximum possible



The Asian crisis gave a strong warning that excessive leverage could be highly risky.

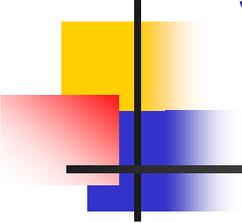
- The algorithmic risk models in finance led investors, and rating agencies, to believe that such risks could be offset by diversification.
- Note that this is a microeconomic, ie 'un-macroeconomic', way of thinking, in that it ignores systemic risk.
- Details of recent past which made systemic risk important
 - Interest rates fell greatly in 2002, coming in part from what happened globally after the Asia crisis
 - Key systemic risk was of a rise in the interest rates
 - HLFIs purchased mortgage-backed securities, their 'leverage return':
 - came to rely on low interest rates
 - came to require a continuing increase in the price of housing.
- For a period
 - interest rates remained low
 - there was a continuing gradual increase in the price of housing – not immediate because of collateral-constrained households – but gradual
- But this setup was fragile



2.3 Understanding the effect of HLFIs in the Crisis

An understanding of HLFIs can help us to understand the workings of crisis

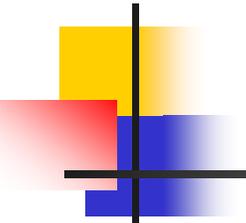
- The crisis struck when interest rates rose
 - In simple macro models this just causes a move along the IS curve
 - Here the operation of a binding leverage constraint causes something very different to happen
- The rise in the interest rate caused a fall in the value of mortgage-backed securities.
- The existence of a binding leverage constraint caused the fall in the value of mortgage-backed securities to be amplified by a *financial multiplier* process (Krugman, 2008).



3 Integrating Finance into Macroeconomics

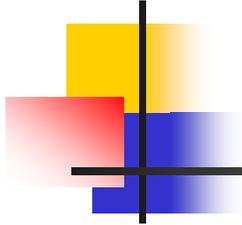
3.1 More about HLFIs

- HLFIs invest in risky assets, which they finance by (i) raising equity and (ii) borrowing from elsewhere (i.e. by 'leveraging'). They do this leveraging either by attracting deposits, or, in the case we focus on, by obtaining funds from other financial institutions elsewhere.
- The leverage ratio, which such highly leveraged institutions maintain, is the ratio between the investments in risky assets which they make and the equity that they raise; ratios well above ten have been common.
- At any point in time, the value of the equity of these institutions depends on the value of the investments in risky assets which they hold minus the value of their borrowing to fund this investment .
- Their leverage ratio then equals the value of these investments relative to the value of their equity, where the value of that equity is computed in the way just described.

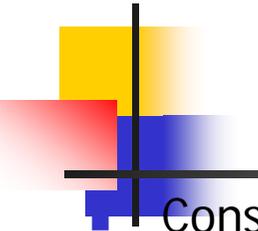


3.2 The Workings of the Financial Multiplier

- Value of the equity of HLFIs is a residual after subtracting their own borrowing from the value of their investments,
- the leverage ratio of HLFIs *rose* after asset prices fell, since the proportional fall in the value of their equity is more than proportional to the fall in the value of financial institutions which they held.
- This meant that their equity became *more* risky, and so that they needed to contract their balance sheets, by selling some of their investments and so reducing their borrowing, to reduce their leverage again.
- Such sales of risky assets led to further reductions in the demand for these risky assets.
 - That led to further falls in the price of these assets.
 - That in turn caused further contraction in the value of HLFIs' balance sheets, further sales of assets by HLFIs, further falls in asset prices, etc,
- In the end, this process caused financial markets to seize up, leading to the collapse of Lehman Brothers.

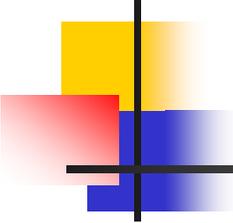


- Discussion adapted from Krugman – Financial multiplier (obtainable on the web, can find with Google)
 - There is a joke about Richard Kahn and the workings of the ‘Keynesian multiplier’
 - There is a related joke about Krugman and the workings of the ‘financial multiplier’
- Process as follows
 - When the value of an asset backed securities fall, HLFIs experience a fall in the value of equity and a *rise* in the value of their the average ratio. They need to sell more asset-backed securities. But this will lower the price further, etc.
 - Providing that the leveraged ratio is greater than unity, this process looks as if it is unstable.
 - Compare with the Keynesian multiplier when the propensity to consume is greater than unity.



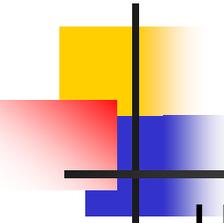
Consider the effect of a rise in interest rates which depresses the value of e.g. mortgage-backed securities.

- This will reduce the general demand for these risky assets, causing the price of them to fall.
- But this initial effect on the price is magnified through a *multiplier* effect, coming from the HLIs. This multiplier effect works as follows.
 - Falling asset prices force down the value of the HLI's investments.
 - But since the value of their equity is a residual after subtracting their own borrowing from the value of these investments, their leverage ratio will *rise*, after the asset prices fall, since the proportional fall in the value of their equity is more than proportional to the fall in the value of financial institutions which they hold.
 - This means that they will need to contract their balance sheets, by selling some of their investments and so reducing their borrowing.
 - They do this in order to enable their holdings of investments to fall in line with the value of their equity.
 - But such sales of risky assets will lead to further reductions in the demand for these risky assets.
 - That will lead to further falls in the price of these assets.
- That will cause further contraction in the value of HLI's balance sheets, further sales of assets by HLIs, further falls in asset prices, etc, etc.'



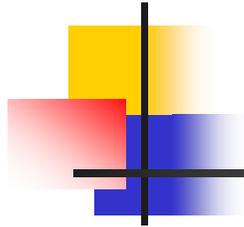
...transmission of shock to real economy...

- Interest rate shock – risk premia rise
- Shock transmitted to IS curve
- This collapse in financial markets has led to a very large increase in household savings. For example, during the boom, the UK saw a rise in financial wealth of approximately 100 percent of GDP, in large part due to a rise in house prices. A fall in house prices of say 30% requires a very large increase in savings for this wealth to be recaptured. This increase in private sector savings has caused the financial crisis to become a demand contraction.

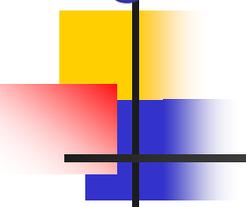


4 Understanding how the bits of the story fit together

- How to embed such a story in a full new-Keynesian macro model?
 - Gertler, M., and Karadi, P. (2009), 'A model of unconventional monetary policy', mimeo, NYU, April, Why is the process not unstable?
 - There are buffers which cushion financial firms and enabled them to withstand falls in the value of their assets.
 - De leveraging takes time. During this time revenues accrue to financial institutions
 - Some financial institutions have big enough cushions that they are able to speculate on the subsequent rise in the value of asset-backed securities, when the downturn reverses
 - Willingness to do this depends on belief that prices of these securities will indeed rise in the future and that
 - But highly leveraged firms without enough capital cushion will not be able to do this



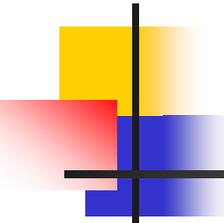
- The analysis will
 - Understand that instability is possible without intervention
 - Not rely on forward-lookingness to solve this problem
 - Will provide the basis for limiting leverage, and requiring sufficient equity cushions, so as guard against instability
 - Provide an understanding of what kind of intervention is necessary in the financial system when the threat of instability strikes
- Such a new Keynesian analysis will not be misled, by methodology, into having a too optimistic outlook.
- By doing this it will respond to Krugman's challenge to 'recognize that Keynesian models provide the best framework'.
-



5

What kind of macro-prudential policy response is appropriate?

- Preliminary: need to understand the linkages within the financial sector and between the financial sector and the rest of the economy
- May conclude that a new version of the Glass Steigal act is appropriate (Mervyn King)
 - 'Never have so many owed so much to so few'
 - Have to find an institutional setup in which financial institutions some are allowed to fail
- Will need to impose Countercyclical variations in some or all of
 - Capital of banks
 - Possibly through countercyclical risk weighting
 - Permissible Leverage of banks
 - Allowable lending policies of banks
 - E.g. deposits on mortgage lending
- Much design work still to be done



6 The Crisis

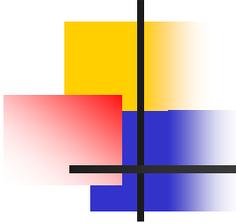
6.1 Onset

- Interest rates rose rapidly between 2004 and 2006
- House prices stopped rising in 2005
- Effect greatly magnified through financial leverage
 - Price of mortgage backed securities fell
 - Multiplier effect
 - Price fall depressed balance sheets, depressing demand for these securities, leading to further declines in price, further contraction of balance sheets, etc
- Collapse in private wealth and increase in savings

6.2 International Transmission

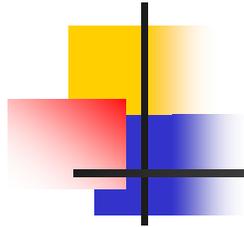
- Keynesian transmission of demand through exports
- International propagation of shocks through an international financial multiplier

- Four components
 - Lowering of interest rates
 - Quantitative easing
 - Open market operations along the yield curve to depress longer term rates
 - Recapitalising the Financial System
 - Fiscal Expansion
 - Large injection of expenditure and of debt, to replace private sector savings

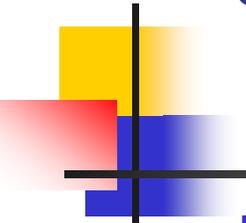


8 Resolving Financial Imbalances in the Longer Term

- Requires
 - disproportionate expansion of demand in surplus countries
 - devaluation of real exchange rates in deficit countries
- Risks
 - (i) Risk of excessive reliance on domestic demand in deficit countries, setting off process again
 - Serious risk about the US
 - UK has devalued significantly – need sterling to stay down
 - Australia in an interestingly different position
 - (ii) Risk of insufficient recovery of domestic demand in the surplus countries
 - China appears to be moving in right direction
 - Will be hard to reduce savings
 - Focus on Investment may create instability
 - A risk that these countries will resist currency appreciation
 - Dynamics of appreciation difficult
 - Movement of other currencies in East Asia will become easier as and when China moves

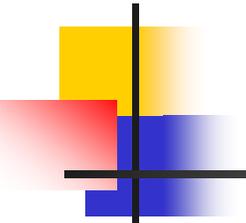


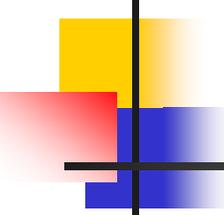
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- (iii) Pressure on Europe if there is not a resolution between the US and East Asia
 - Internal Imbalances in Europe make this harder
 - Adjustment may be impeded by fiscal imbalances and the difficulties in resolving these fiscal imbalances



9 Resolving Fiscal Imbalances in the Longer Term

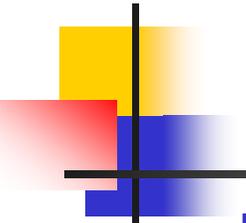
- With the recovery, fiscal positions will be strained.
- As the recovery comes,
 - investment and consumption will rise
 - consumption will increase
 - fiscal deficit risks becoming excessive –
- What will be required is ability to raise taxes
 - note this difficult short/long transition
 - *Increase* in debt required in short term, but
 - *Control* over debt needed in longer term
- Time inconsistency - need credible promise of tax increases
- Long term interest rates may rise
 - Fear that taxes will not be raised
 - Fear that debt will be inflated away
 - Problem worsens if fear of public sector default.

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- Fiscal time profiles must assist resolution of global imbalances.
 - The fiscal discipline necessary in the deficit countries - in particular in the US and the UK - must be far greater than the fiscal discipline in the surplus countries.
 - Fiscal position
 - can remain disproportionately loose in surplus countries
 - fiscal pressures must not be resisted in deficit countries.
 - This could easily go wrong. Possibility of US interest rates rising
 - either to control inflation,
 - if debt is inflated away
 - Risk of capital being pulled into US government bond market in
 - This could then cause the dollar to rise, and currencies of other deficit countries could rise for similar reasons.
 - endangering the correction of global imbalances



10 Global Policy Surveillance by the IMF

- A new alternative to the current non-system is needed
- Frameworks need to be broader than the inflation-targeting regime in which policies
 - do not produce financial boom and bust,
 - do not produce external imbalances and inappropriate exchange rates,
 - do not produce inappropriate fiscal outcomes.
- There needs to be a move towards some external enforcement of rules relating to these frameworks.

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- This virtuous policy trio of policies will *not* be self-enforcing
 - The IMF will need to enforce all three elements.
 - Making multilateral surveillance more effective
 - Macroeconomically the IMF's *World Economic Outlook* is the natural vehicles for this analysis, coordinated with the IMF's programme of multilateral surveillance. will imply a loss of policy sovereignty, particularly w.r.t fiscal policy.
 - Microeconomically IMF needs to play a role as a macroprudential supervisor – preferable that the Fund does this instead of FSB
 - Requires more effective global governance of the IMF
 - Removing Executive Board of Fund from Article IV reports.
 - Could strengthen the accountability of the Managing Director and his Deputies
 - Reporting to a strengthened IMFC
 - Agreement about multilateral surveillance will be difficult to achieve.
 - has so far been of limited effectiveness.
 - but current system is unsustainable.